

---

**GLOSSARY**

Assemble (data and information) Through solicitation and other means, gathering all *existing and readily available water quality-related data and information*.

Assessment Unit (AU) A waterbody whose attainment status is reported in the Integrated Report. An AU must be named and located based on the National Hydrography Dataset (NHD). Where the states's or territory's spatial resolution is on a finer scales than NHD, EPA will translate that resolution into the NHD.

Attainment The condition of meeting applicable *water quality standards*.

Assessment Making a decision, based on all *valid* (accepted) *existing and readily available water quality-related data and information*, about the condition of a segment with regard to *WQS* (i.e., making a *WQS attainment status determination*.)

Averaging period The period of time over which the receiving water concentration is averaged for comparison with criteria concentrations (see also Criterion-Duration).

Categorization determination Deciding in which of EPA's five summary categories (or a state's equivalent system) a particular segment-designated use combination or segment-pollutant combination belongs.

Cause(s) of Impairment The stressor(s), whose presence in a waterbody is/are, singly or in combination, causing or contributing to failure to meet any applicable *WQS*. Impairment causes include, but are not limited to, pollutants and other forms of pollution.

Characterization determination Making, based on all *valid existing and readily available water quality-related information*, a *WQS attainment status determination*; or, deciding that additional data collection and analysis will be needed before attainment status can be determined. A characterization determination can be made with regard to one or more, or all, of the *WQS* applicable to a *segment*.

Consider (data and information) Determining whether individual data points, data sets, or other forms of information meet previously published *quality assurance/quality control (QA/QC)* specifications (see also *evaluate (data and information)*). Data and other information meeting such specifications is *valid*.

Criterion-Duration The period of time (averaging period) over which ambient data is averaged for comparison with a *criterion-magnitude*. For example, certain EPA *WQC* for protection of aquatic life are expressed, in part, as 4-day average concentrations of a particular pollutant (i.e., the criterion-duration is 4 days). *WQC* expressed as a "concentration not to surpass (supercede, exceed, etc.)" are often called "instantaneous criteria", in that their duration/averaging period is just a second (instant).

Criterion-Frequency That element of a numeric *WQC* describing how often waterbody conditions can surpass the combined magnitude and duration components (i.e., specifying the allowed number of *excursions* that can occur within a certain period time (i.e., the acceptable rate of excursions). For example, certain EPA aquatic life *WQC* are stated as "the 4-day average concentration of the pollutant

shall not supercede \_\_\_ ug/L more often than once every 3 years, on average.” Here, the *criterion-frequency* is “once every 3 years, on average.”

Criterion-Magnitude (or Criterion-Concentration) That element of a numeric *WQC* specifying acceptable ambient levels of a pollutant or other indicator. Most criterion magnitudes are expressed as concentrations (e.g., milligrams/liter), though magnitudes for some parameters are expressed differently (e.g., pH and temperature).

Data Quality Objectives A specification of the quality of the data needed in order to meet the monitoring project’s goals.

Designated Uses (DU) Those uses specified in state or tribal water quality standards regulations for a particular segment, whether or not they are being attained. (40 CFR 131.3.(g)) Uses so designated in *WQS* are not meant to specify those activities or processes that the waterbody is currently able to fully support. Rather, they are the uses/processes that the state or tribe wishes the waterbody to be clean enough to support, whether or not the waterbody can, in its current conditions, fully support them.

Digression (Exception) A single grab sample, or set of spatially-composited samples, with a concentration inconsistent with (higher than in most cases, but lower than for some parameters like dissolved oxygen) the *criterion-concentration* in an applicable *WQC*. For example, if the *criterion-concentration* for a pollutant is 13 ug/L, and one has 4 grab samples containing concentrations of 9 ug/L, 17 ug/L, 5 ug/L and 22 ug/L, one would have observed two digressions” in this set of samples (see *excursion* and *exceedance*, for comparison).

Evaluate (data and information) Determining whether individual data points, data sets, or other forms of information meet previously published quality assurance/quality control (QA/QC) specifications (see also *consider (data and information)*). Data and other information meeting such specifications is *valid*.

Exceedance A situation in which ambient conditions are inconsistent with those desired conditions described by the combined three elements of a numeric *WQC* (magnitude, duration, and frequency). Put another way, when the rate of *excursions* is higher than that specified by the *criterion-frequency*. For example, an *exceedance* would have occurred if a *WQC* for a certain parameter says “the one-hour average concentration shall not surpass 40 ug/L more often than once in 3 years, on average” and during a given 3 year (1095 day) period there are two or more one hour periods in which the average concentration was 41 ug/L or higher. Waters on which one or more *exceedances* are failing to meet *WQS*, and therefore must be placed on the state’s, territory’s or tribes’ section 303(d) list. By contrast, occurrence of a *digression* or an *excursion* does not, in and of itself, constitute a failure to meet applicable *WQS*.

Excursion Having an average concentration in a set of samples, or in a waterbody itself, that is inconsistent with the average concentration specified by the combination of the magnitude and duration components of an applicable *WQC*. For example, if a *WQC* says the 30-day average concentration of pollutant “x” should be no greater than 77 mg/L, and the results of monitoring, modeling or other studies indicate there is a 30-day period with a concentration of 88 mg/L, then an *excursion* has occurred (compare with *digression* and *exceedance*).

Existing and Readily Available Water Quality-Related Data and Information The definition of this term includes, but is not limited to:

- Information found in watershed plans and other types of water quality management plans;
- Information contained in reports and databases developed pursuant to the CWA, including: Integrated Reports, separate section 305(b) report, a section 303(d) list, a section 314 lakes assessment, a section 319(a) nonpoint assessment, STORET, the ADB, etc.;
- Information appearing in reports and databases developed pursuant to other federal statutes and programs, including but not limited to SDWA section 1453 source water assessments, Superfund and Resource Conservation and Recovery Act reports, the Toxic Release Inventory, USDA programs, and USGS programs;
- Restrictions and/or advisories regarding shellfish harvesting and water-based recreation;
- Any *observed effect* (see definition below);
- Results from site-specific biological, chemical, and physical monitoring and surveys;
- Results of utilization of remote-sensing technology efforts; and
- Results of use of predicative tools/ extrapolative tools (e.g., probabilistic surveys, landscape-models, dilution calculations and models estimating pollutant loadings and ambient water quality).

Impairment Failure to support a *water quality standard*.

Observed effect(s) Direct manifestations of an undesirable effect on waterbody conditions. For example, fish kills, fish lesions, depressed populations of certain aquatic species, and bioassessment scores are observed effects indicating changes in aquatic communities. Major algal blooms, undesirable taste and odor in raw and finished drinking water, and increased incidences of gastroenteritis and other waterborne diseases among swimmers are also observed effects. Depending on a state's *water quality standards* and specific waterbody conditions, *observed effects* may form the basis of an impairment decision. For example, depending on the magnitude and cause of a fish kill, this observed effect may or may not result in an assessment of "impaired." Generally speaking, pollutants and pollution are not considered *observed effects* (e.g., lead, pesticides, phosphorus); rather, they are causes of *observed effects*.

Parameter A specific pollutant, or other chemical/physical condition, such as phosphorus, copper, E. coli bacteria, BOD, temperature, pH, turbidity, etc

Quality assurance project plan (QAPP) A written document that outlines the procedures a monitoring project will use to ensure that the samples participants collect and analyze, the data they store and manage, and the reports they write are of high enough quality to meet project needs.

Quality assurance (QA) The overall management system which includes organization, planning, data collection, quality control, documentation, evaluation, and reporting activities. QA provides the information needed to ascertain the quality of data and whether they meet the requirements of a project. QA ensures data will meet defined standards of quality with a stated level of confidence.

Quality control (QC) Routine technical activities whose purposes are, essentially, error control. Since errors can occur in either the field, the laboratory, or in the office, QC must be part of each of these functions.

Population A group of animals (including humans), or plants belonging to the same species. This is the definition of "population" utilized most often in environmental sciences. Statisticians, however, use this word in a much broader sense—the set of individuals, items, circumstances or conditions that is being

studied. Frequently “target population” is used by statisticians to describe the entire universe of things/situations from which a set of samples is taken. Hence, the “target population” from which a set of water quality samples were taken would be all concentrations of the parameter of interest in every drop of water found in a particular assessment unit in every second of time over a certain period. The term “waterbody conditions” is used in this document in reference to what statisticians call “population”.

Sample A single measurement or aliquot. Often called a “grab sample” in environmental monitoring. (Note: This is a different use of “sample” than that commonly employed by statisticians. What a statistician would call a “sample” is referred to as a “sample set” in this document.)

Sample Set A group of individual measurements or aliquots (i.e., a collection of “samples”).

Section 304(a) criteria Those *WQC* developed by EPA under authority of section 304(a) of the CWA, based solely on the latest scientific information regarding the relationship that levels of a stressor (pollutant, etc.) has to effects on aquatic organisms or human health. These criteria are issued as guidance to states, territories, and tribes for use in developing their own *WQC*.

Segment A waterbody (river, lake, bay, estuary, wetland, etc.) or portion thereof.

Threatened waters EPA recommends that states consider as threatened those waters that are currently attaining *WQSs*, but which are expected to exceed *WQSs* by the next listing cycle (every two years). For example, segments should be listed if the analysis demonstrates a declining trend in a specific water quality criteria (*WQC*), and the projected trend will result in a failure to meet a criterion by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle); or, segments should be listed if there are proposed activities that will result in *WQSs* exceedances.

Unsupported uses Those *designated uses* that are not fully supported by conditions in the waterbody to which those uses are assigned by *WQS*.

Use (data and information) Employing data and information to make a characterization determination.

Valid (data and information) Data meeting *QA/QC specifications*. Status should *use* all such data and information making *characterization determinations*.

Water Quality Criteria (WQC) Elements of state, territorial, or tribal *WQS*, expressed as parameter (pollutants, etc.) levels or narrative statements, representing a quality of water that supports one or more *designated uses*. Numeric *WQC* addressing chemical or physical conditions contain three attributes: 1) *magnitude* (e.g., concentration), 2) *duration* (averaging period), and 3) *frequency* (recovery interval).

Water Quality Standard (WQS) Provisions of state, tribal, or territorial (or, in some cases, federal) law which define the water quality goals for a waterbody/segment. *WQS* consist of: *designated uses*, *water quality criteria* (both numeric and narrative), as well as antidegradation policies and implementation procedures.

WQS Attainment Status Determination Deciding, based on use of all *valid* existing and readily available data and information, whether *WQS*, or components thereof, are being met or are not being met.